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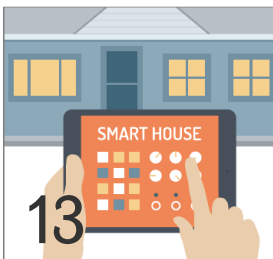
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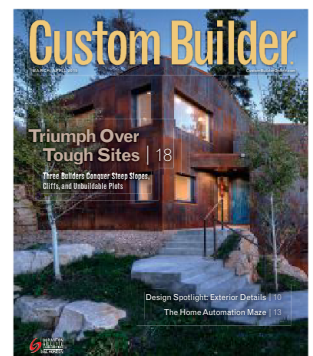
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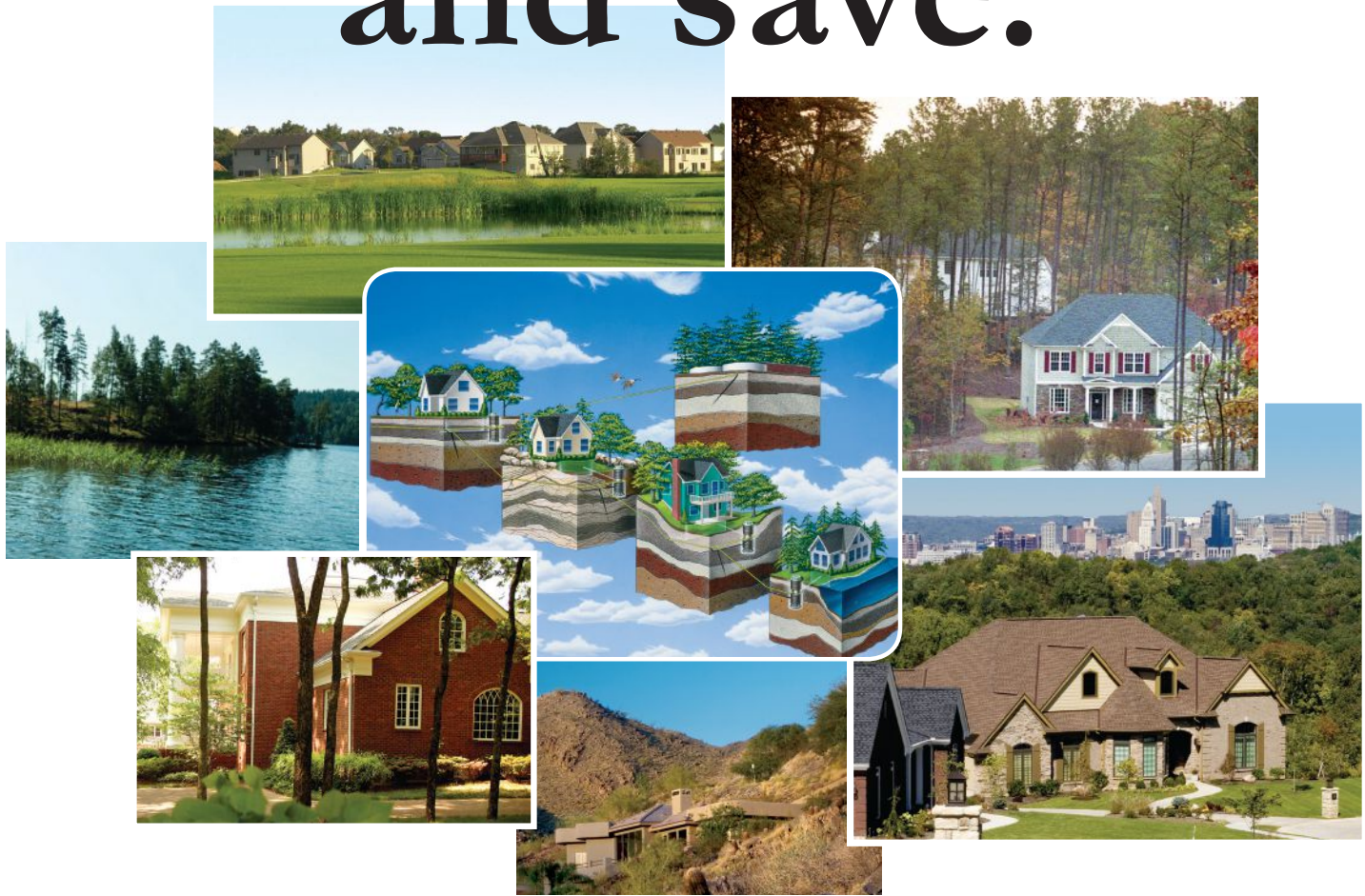
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Cover: Summit Haus, Park City Design + Build project manager Chris Price's own home, overlooks the Uinta Mountains in Park City, Utah. Builder/Architect: Park City Design + Build Photo: Douglas Burke



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# Walking Away From Trouble

A while back, a homeowner down the block from a project I was working on asked me to stop by and give him an estimate. He had a big house by city neighborhood standards, about 4,000 square feet, and a detached three-car garage, all brick. The masonry was in great shape—no wash outs, cracks, deteriorating bricks, or crumbling mortar. We walked the perimeter and he pointed out pinholes on the wall from the grade to the top of the elevation that he wanted “touched up.” Throughout my tour he ranted about tradesmen and the lack of pride in their work and revealed that other contractors looked at his house but didn’t come back. Add me to that long list.

I figured I would have spent more time looking for cross joints to tuck point than actually working on the wall. Plus I strongly sensed that no matter how thorough I was, I would never be able to please this guy. I told him I was booked with projects, which I was, and wouldn’t be able to take him on. Sometimes the best projects are the ones you turn down.

Every business has its bad-customer anecdotes and custom-home builders have plenty of them. I entered “clients from hell” in an online search just to see what red flags bloggers and other contributors identified regarding buyers that builders should stay away from. There are the warnings about certain personality types, avoiding the nickel-and-dimers, the clients who want something for nothing, and buyers with unrealistic expectations. I even read one entry where a builder urged his readers to avoid the “wimps,” defined as buyers who hold back their true feelings and can’t make a decision. He added that such customers tend to work as accountants, teachers, middle managers, and government workers.

Based on a quarter century of observing customers, Kevin Estes of Estes Builders, in Sequim, Wash., shared during an interview the kind of people he thinks are best suited for dealing with the process of building a custom home and those who are not. He’s considering blogging about it on his company’s website.

“People who are less satisfied and more stressed during a custom home build are the people who waffle, choose something, and then unchoose something,” he says. “There’s definitely a correlation with people who are able to make a decision, be confident with that decision, and move on.”

So an important component of Estes’ pre-construction planning is reinforcing his clients’ decisions, building their confidence, and getting them to trust their instincts (see “Building It Like Production,” in the Jan/Feb issue). But for those who waffle, he says, “The best projects are the ones you don’t do because it’s not a good fit.” Unfortunately, too many of us get that kind of wisdom only after having endured the bad ones.

Mike Beirne  
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# Technology: A Blessing and a Curse



The pendulum has swung too far from personal contact and communication

By Mark Richardson, CR, Contributing Editor

**T**echnology has not only dramatically changed the way we do business, it has affected how we interact with each other on a fundamental and personal level. Our dependence on technology has become like a drug, and we can't imagine living without these tools. Technology is certainly a blessing, but it also is a curse.

I believe our use of technology is abused most in our interaction with clients. In many cases this is driven by the client's desire to leverage technology rather than having a face-to-face conversation. Today's builder not only needs to be an expert in construction but also in how to communicate and interact with the client in order to grow long-term relationships.

You now have the ability to communicate about the entire project electronically, from schedules to designs. You can address important questions and receive payments without ever speaking to the client. If you want feedback on the product or the client's experience with your company, electronic reviews and surveys can handle those tasks. It's all very efficient, but don't assume that it's always effective. Don't assume that you're creating a client for life through technology.

Over the holidays I received about 35 electronic holiday cards and messages and

five handwritten cards. Which of the two methods of holiday cheer do you think I appreciated the most? Which of the greetings did I even read and which ones got deleted or thrown away the quickest? I don't want to sound unappreciative of the holiday gesture, but I do want to stress how important it is to keep your high-tech and high-touch outreach in balance.

Since I know you have a long list of ways you use technology, I suggest you dust off a few high-touch techniques to weave back into your daily habits.

**1) Call:** Don't just email. Learn how to leave amazing, memorable voice mails.

**2) Send simple handwritten notes:** I have a good friend who sends me one after every lunch (we get together about every three months). What a great way to keep the lunch memory alive.

**3) Stop by:** How often do you pop in at a past client's home just to say, "Hi, I was in the neighborhood and wanted to say hello and see how you're doing." This may be the best marketing/client feedback activity you can do.

**4) Make one call a day:** Think of it as a one-a-day vitamin. Call one past client each day with a pure interest to keep in touch, not to peddle services. It can result in millions of dollars in business over time.

**5) Train your team to be high-touch:** When a carpenter arrives at a client's

home, he should look for the client and say hello. Training is the key because the high-touch mindset is not natural for most craftsmen.

**6) Make the process more visual:** Most clients connect and feel more comfortable with explanations that use hand-drawn sketches (rather than CAD), photos, metaphors, and analogies. You may also use more diagrams in client meetings to describe your process. All these low-tech techniques help you connect in a more meaningful way.

**7) Give a gift:** This can be a simple, clever gift that might be appreciated personally or something cool for the client's home. It may also be a couple hours of services to help reduce their home stress. The cost is generally small, but the memory of the relationship will live on.

I do believe that technology has been a blessing. When used properly, it can save tremendous amounts of time and eliminate miscommunication and other issues that arise during a project. However, I also think the pendulum has swung too far.

Keep it balanced, or at least ask yourself: What is the most effective way to connect? You will feel better and see better results. CB

Mark Richardson, CR, is an author, columnist, and business growth strategist. He authored the best-selling book, "How Fit Is Your Business?" as well as his latest book, "Fit to Grow." Reach him at [mrichardson@mrichardson.com](mailto:mrichardson@mrichardson.com) or 301.275.0208.





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# design spotlight: exterior details

Kathy Denise Dixon, AIA, NOMAC, LEED AP+, CDT, CSI  
K. DIXON ARCHITECTURE, NATIONAL HARBOR, MD.



The most basic element of welcome to any home is the front porch. This moment of semi-private/semi-public transition often is rather undefined on an average home, or the porch is sometimes an afterthought without much character. If a concerted effort is focused on porch design, the result is an immediate face-lift that adds value and aesthetic

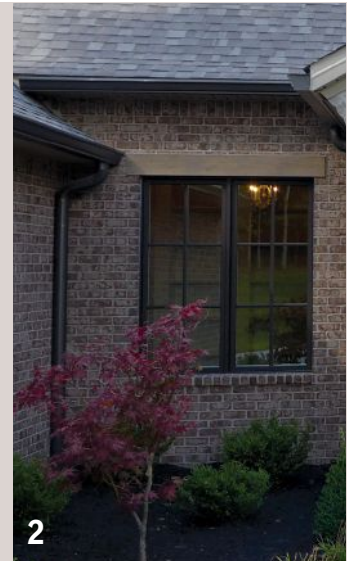
to an otherwise marginalized, yet important path into one's castle. Shown here are two porches. 1) One small porch was given its identity by providing a modest roof canopy. 2) The other is a small bungalow with a porch extended across the entire front elevation. The canopy and its double column detail give the home greater presence and additional outdoor living space. The Dutch Colonial roofline with detailed siding transformed what would be a modest bungalow into a sophisticated home.



Nate Eicholtz  
ZURICH HOMES, CROSSVILLE, TENN.

Character and charm are often an overall perception of a home's exterior façade, but in actuality the sense of style that draws an onlooker's eye is made up of hundreds of small details, resulting in a lasting impression.

The beauty of a home is comprised of subtle details: flower boxes overflowing with vibrant colors; large columns supporting sprawling porches; a quaint little window tucked into a dormer. A few examples of such details are shown here: 1) shutters designed in the style of the home that are wide enough to cover the window when closed. 2) Stone or wood headers extending past the opening to give the visual effect of support. 3) A sweep to a roofline or dormer gives a house an Old World feel. Well-executed details contribute to the overall beauty of a home and enhance its curb appeal tremendously.





## Julie Speer

HARTMAN HOMES, HUDSON, WIS.



A thoughtful front door selection sets a tone and adds character to the front elevation of a home. With a wide variety of wood species and styles available in the marketplace, homeowners may

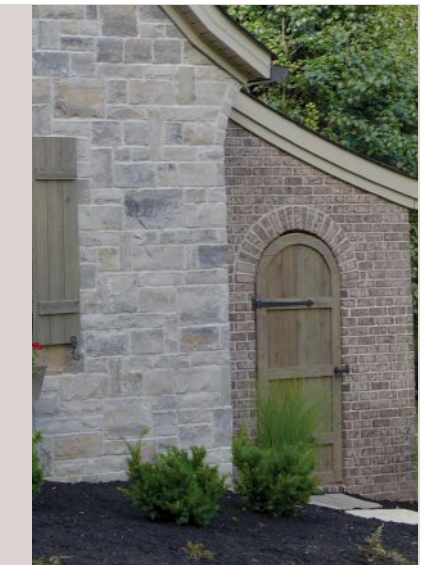
have a difficult choice ahead of them.

Guiding your client toward a selection that complements the architectural style of their exterior but also reveals a glimpse of their unique personality can make all of the difference in creating a successful exterior. A modern or Prairie-style home would likely emphasize horizontal, clean lines. A cottage-style home may have a beaded center panel, and a bungalow may have a dentil detail or leaded glass.

Not only are the door's details important, but the front door is also an opportunity to add a punch of color or texture. A sweet yellow farmhouse may be screaming for a punch of red on the front door. A beautiful wood tone can accent other natural elements on the exterior like cedar brackets, window boxes, or columns. The front door should draw you in and make you want to see what's behind it.



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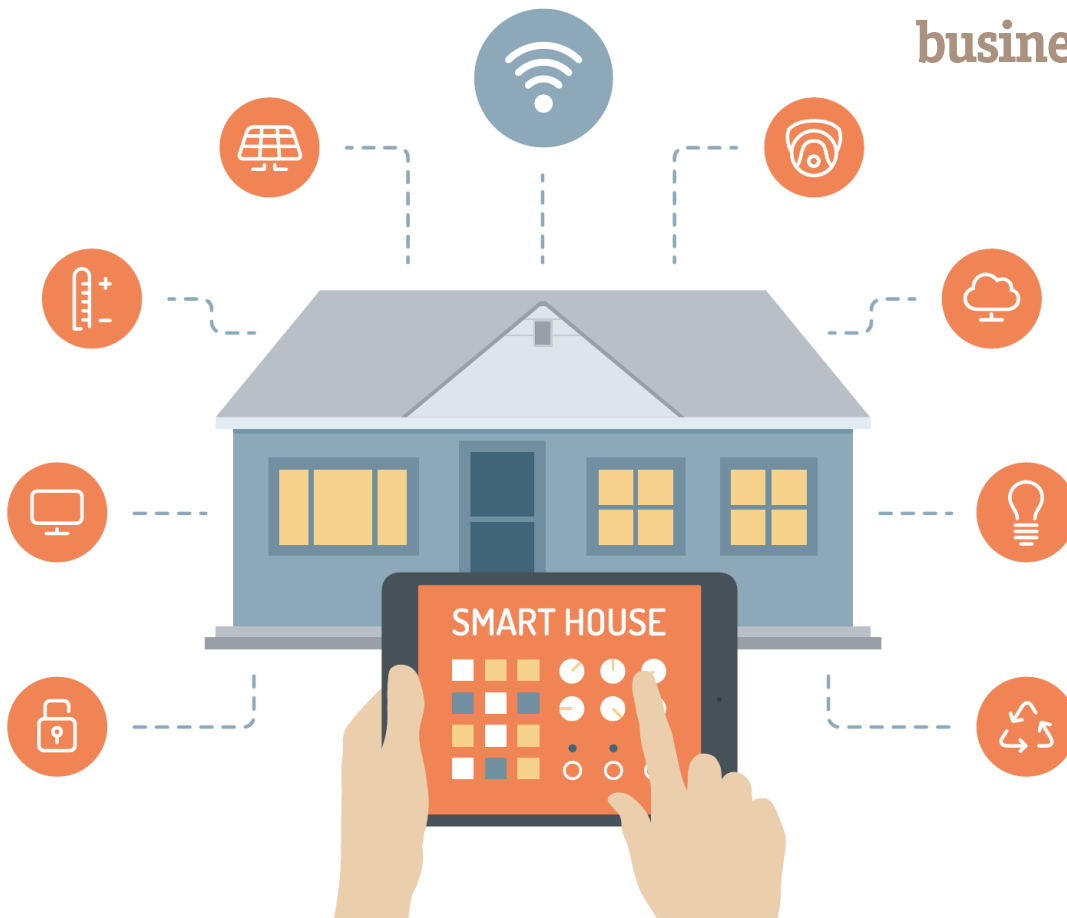
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# The Wild, Wild West of HOME AUTOMATION

The mix of protocols, compatibility, vertical versus hub systems, and picking a technology partner is daunting, but some builders are navigating their way through the automation maze

*By Mike Beirne, Editor*

The owner of a smart house is driving home after work. She's a couple blocks away from turning into her driveway, yet the GPS signal from her smart phone has already activated the furnace to start warming the house to her desired level of comfort. Upon pulling up to her driveway, sensors activate the outdoor garage lights, deactivate the security system, and open the overhead garage door. Also, the lights for the home entrance, hallway, and kitchen turn on and her favorite music begins playing over the speakers.

By next morning, this homeowner is packing her car for a weekend getaway. Just before merging onto the expressway, she realizes she's not sure if the home's thermostat was adjusted. She presses the Away icon on



her phone app and automatically the heat sets to vacation mode, the doors lock, the security system is activated, and the lights turn off—except the ones that are pre-programmed to stay on and make it look like someone is home.

Steve Neary, president and owner of Copperleaf Homes, in Colorado Springs, Colo., lives in that kind of house—as far as the garage, thermostat, and lights are concerned—and some of those automation features are standard for his new-home customers. A Copperleaf package includes a Crestron CPU, a garage-to-house lighting scene, as many Nest thermostats as necessary—usually two to three—to run the house, six light switches, and an electronic entry lock. Those devices eventually will be controlled by the iPad tablet that Copperleaf gives to clients upon contract signing so that they can follow their home's progress during construction.

"If you're not doing home technology, you're archaic," Neary says.

The standard automation package, which costs Neary less than \$10,000, is a differentiator for the company, as Copperleaf is the only builder in that market currently offering it. Neary expects that competitors will climb aboard, so he's considering adding more features, perhaps motorized shades, to his package. Since offering the standard package, about 75 percent of his customers upgraded to other Creston options, such as a home entertainment system and security cameras, spending an additional \$25,000 to \$30,000, part of which is income for the builder.

## A Growing, Evolving Market

Call them products for the smart home, home automation, home control, the connected home, or even the Internet of Things, this industry—thanks to improved sensor technology and the popularity of smart phones—generated \$8.1 billion in revenue in 2012 from installations, monitoring, and maintenance. The market is expected to grow to \$30.5 billion by 2017, according to market research firm Parks Associates.

These products don't merely automate tasks; they can be almost intuitive, making things happen when certain conditions occur, such as when a GPS signal from a mobile device is near, or when the opening and closing of motorized window blinds is set to track the sun. Yet, as with all things that promise to make tasks convenient or simple, getting there can be complicated.

The number of automation products on the market is exploding, and there

is no standardization. Consequently, confusion exists about what can work with what and which player has staying power. Already there are more than a dozen communication protocols—ZigBee, Z-Wave, Wi-Fi, Thread, Kidde, and Bluetooth among them—as well as manufacturers with proprietary platforms for their own products such as Apple HomeKit; Insteon, which has a partnership with Microsoft; and Lutron Clear Connect. Security companies and telecoms such as Comcast Xfinity, AT&T Digital Life, Time Warner, and others also are in the mix with systems that charge a monthly subscription fee.

Some manufacturers collect data about customers' usage, so those networks are closed and link only to devices within the product line. Others, such as Core Brand's ELAN control systems have an open architecture platform and can integrate with multiple protocols and brands. Lutron Smart Bridge Pro can talk to its own Caséta dimmers and Serena motorized shades as well as to a Honeywell thermostat and GE bulb. But a Samsung phone can't talk to a Sony appliance.

Builders also have to pick a path. Either they select a hub system that acts as a central brain and relays commands from a mobile phone or tablet to the home devices, or they can go with a more affordable plug-and-play vertical integration setup that communicates with the home network via Wi-Fi and each device is controlled by its own app rather than one app controlling everything.

"We hate this stuff," a Massachusetts builder admitted. "When our customers ask us about home tech devices they want, we don't even want to hear about it. We send them to our AV contractor to take care of that stuff."

That actually is a smart move says Joe Lautner, managing business director for Core Brands, a Nortek division that makes ELAN network controllers.

"I've heard builders say, 'I've got an IT guy, so let me buy the products direct, and I'll make the margin,'" Lautner says. "They're looking at the opportunity and wondering why they're letting the contractor make the money. Typically, builders aren't set up to do the long-term support of anything. They're going to have to look in the mirror and ask themselves: Am I going to be the long-term support for this technology? Am I going to be the guy who stays on top of the technology and knows what's fresh?"

Selecting an automation system requires research; much like the due diligence that builders perform when they pick appliances and building materials. Also, choosing a home automator (also known as a technology integrator) to handle installation and warranty issues demands the same vetting that a builder would do with any subcontractor.

Previously, home automation demand was pulled by audio systems, and the en vogue subcontractors then for that work were ex-musicians or concert roadies. But when streaming Internet became the primary medium for consuming music, home entertainment



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systems needed a network. Installers with a technical background emerged as the preferred contractors for automated home systems. Even better are low-voltage electrical subcontractors who have Cisco-certified techs and licensed electricians onboard for installing boxes and pulling wire.

Copperleaf's technology partner, HomeRun Electronics, in Colorado Springs, also handles electrical work on about a third of the builder's custom-built homes (50 closings in 2014). Customers meet with a HomeRun representative who explains what is included in the standard package and demonstrates available upgrades. The sub handles issues with the network, product compatibility, and the warranty.

## Tapping Subcontractors for Expertise

"It's just like another trade," Neary says. "They work well with our other electricians and let them know what the design parameters are and what's needed to make our system work. It's no different than the plumber, electrician, and heating guy working together."

Neary spent months talking and researching various tech companies and trying out gadgets and devices before picking Crestron. He liked what he saw in terms of the manufacturer's track record, U.S.-made components, flexibility to add more devices later to the starter package, and ease of use. Neary recruited his wife as a tester and used that experience to work with HomeRun and Crestron to tweak setups and app controls so that they are easy to use.

When Matthew Dill, president of Summit Signature Homes, in Burr Ridge, Ill., started his home automation due diligence, he was anxious about the risk of being an early adopter. As vendors pitched their toys, he had doubts about the reliability of some gadgets, the staying power of manufacturers, and the impact on his company's reputation should a system have a glitch and lock his clients out of their house on a rainy day.

"What I learned is that if you want one app to control everything—and we've done those hub systems—you have to pay a lot for it. If you're OK with a setup where you're opening five different apps, the cost is substantially less," Dill says.

The automation options that Summit Signature offers customers include the Sonos home entertainment system, LiftMaster wireless garage door opener, and controls for thermostats and security.

Buyers who take the automation options typically spend \$5,000 to \$6,000. Dill has a subcontractor handle the installation, and he recently instructed his estimators to find more affordable features to offer clients.

"The reality is, those hub systems

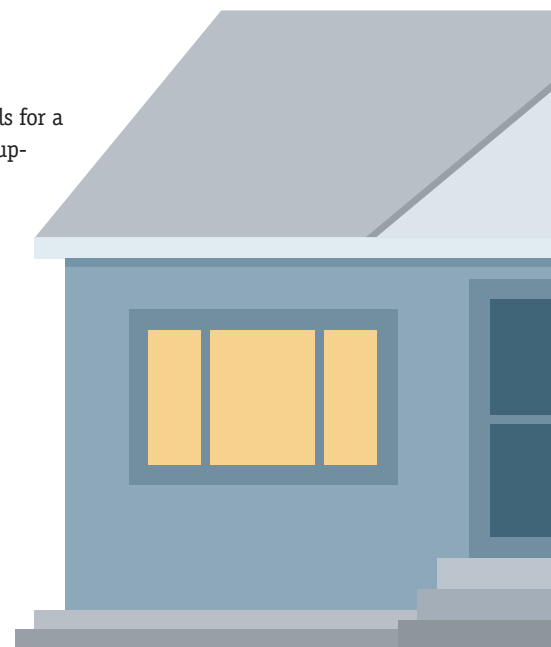
make sense on a house that sells for a couple million dollars, but the up-front costs to buy those is out of our clients' budgets, even for a high-end home. In the Chicago market, we're just getting out of the recession, so [buyers] are not cool with blowing it out on extras. [The market] is getting better, but it's still a little soft."

Systems with a hub—also called a control processor—and with all the bells and whistles for a luxury home can cost in the high five and even six figures. "Our clients are the 1 percent," says Mark Lafave, executive coordinator for Bedford, N.H.-based Maverick Integration, which installs custom systems for builders and clients with million-dollar mansions. "We deal with the wealthiest of the wealthiest people, and an awful lot of them are fairly acclimated to having a 20-inch AMX automated control center in their kitchen and then using iPads for some verticals and some centralized information throughout their home. Everybody is trying to figure out a way to get into [home automation] now. It's got to be a little scary because these verticals don't have tremendous profit margins unless you cover a whole lot of categories."

Yet there are hub network suppliers marketing systems with mid-market price points and lower, such as Clare Controls, Wiser from Schneider Electric, Alarm.com, and Nexia Home Intelligence. Even high-end manufacturers, such as Core Brands, are selling a point-of-entry ELAN controller for about \$500, which would enable builders to put together a package with outdoor and interior pathway lighting and one or two other features for about \$1,500.

Core Brands, as do other manufacturers, has dealer support programs for generating builder business by giving discounted product that builders can install in their own residence or in model homes. The strategy is: If a builder lives with it, he's more comfortable recommending it to his customers.

"We're right in the middle of this transition, but I think we're over the hump, and homeowners are going to come in with knowledge [of automation]," Lautner says. "So if a builder presents an awareness, understands it, and can articulate the steps of walking through the options with a good partner, he'll differentiate himself over the guy who doesn't." CB



# TRIUMPH OVER tough sites

To create a home that captures prized views, custom builders often have to tackle steep, intimidating sites

By Susan Bady, Senior Contributing Editor

Capturing million-dollar views is the goal with many one-of-a-kind custom homes. Often this entails building on a steep slope or, literally, the edge of a cliff. The site preparation required—not to mention the preliminary design and engineering—can be onerous. In this article, three design/build firms tell *Custom Builder* how they overcame the challenges of a daunting site.

## Conquering an 'unbuildable' site

Lots in Summit Park, a neighborhood in Park City, Utah, tend to be very steep and very challenging, but that didn't stop architect/builder Chris Price from designing and building his personal residence there.

Price, a project manager and designer for Park City Design + Build, purchased a 70-by-120-foot rectangular lot in Summit

Park that was unbuildable, according to county records. "There were some things wrong with the deed, and it took a couple of months to clear that up," Price says. With slopes as steep as 45 degrees, the property was extremely intimidating, "but it worked out for me because I'm young and I have a ton of energy and was super-motivated to build my own house," he says.

Excavators made a 30-foot cut into the hillside, then bermed up into the hill, which helps mitigate temperature swings. Price built a retaining wall to hold back a large amount of loose soil that a neighbor had pushed onto his lot years ago.

The 27-year-old LEED-certified professional was also keen on applying Passive House principles. He worked with an energy modeler who helped him design and build the home based on the program's rigorous standards. The framing and ventilation became critical elements.



PHOTO: DOUGLAS BURKE





Constructed on a lot previously deemed unbuildable, this Park City, Utah, home features an exterior that is a hot-rolled steel rainscreen system developed by Park City Design + Build. "It weathers naturally; you don't have to do anything to it," says architect/builder/homeowner Chris Price.



# challenging sites



**Left:** European-made tilt-and-turn Zola triple-pane windows contribute substantially to the home's energy efficiency. **Below:** A private deck off the master bedroom is the perfect place for architect/builder/homeowner Chris Price to relax after a grueling workday. The bedroom is 13 feet by 14 ½ inches. The master bath is 10-foot-3 by 6-foot-2 and has a steam shower.

The southeast-facing home, dubbed Summit Haus, nestles into the slope and takes full advantage of the views, which range from short and heavily wooded to a long corridor toward the Uinta Mountains.

"I only have 74 percent of the annual solar access because there's a big hill directly southwest of me, so the morning sun is pretty much the only sun I get in the winter months," Price says. "I wanted to take advantage of that for heating."

The 2,300-square-foot home has 2x4 walls on the inside and vertical Trus Joists (TJIs) every 24 inches on center on the outside. This assembly, which Price calls a modified Larsen truss wall, is 16 inches thick and insulated on the outside.

The wall cavities are filled with copious amounts of cellulose insulation. There is also 12 inches of insulation underneath the radiant slab and 8 inches around the foundation. The metal roof was framed with 14-inch TJIs, topped by another 6 inches of insulation. R-values are 70 in the walls and 100 in the roof.

"It's all about getting rid of the thermal bridges," he says. "You insulate every single crevice and don't let anything touch the outside without being insulated."

Triple-pane, tilt-and-turn Zola Thermo uPVC windows, manufactured in Europe, offer performance that is "superior to any North American brand we have seen thus far," Price says. Radiant heat on the first floor heats the entire house, and a heat recovery



PHOTOS: DOUGLAS BURKE

ventilator draws in fresh air and expels stale air. There is also a European wood-burning RAIS stove with external combustion.

The heating bill for Summit Haus is only about \$30 per month, compared with \$200 to \$300 a month for neighboring homes.

Price worked 80-hour weeks during design and construction. He tackled a substantial part of the labor, including framing, plumbing, electrical, and trimwork while attending the University of Utah for a master's degree in architecture and working full time at Park City Design + Build.



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## Family-friendly farmhouse

A couple in their mid-30s with four children under the age of 10 approached Farinelli Construction of Mechanicsburg, Pa., about building them a home on a heavily wooded hillside site.

"The lot had grades of up to 30 percent in some places," says company owner Don Farinelli. "We couldn't just bury dirt against the trees because that would kill them, and at the same time, we couldn't remove dirt, or we'd be into the roots. So we had to find a sweet spot: keep the existing grades, use retaining walls, and position the house so that it preserved views of Harrisburg."

Town regulations prohibited building on the steepest parts of the 3-acre lot. "The further you got up the hill, the more problematic it was to get a driveway that wasn't on a 12 to 14 percent grade and position the garage so it wasn't visible from the street," Farinelli says.

A substantial amount of de-watering was necessary, partly because of underground springs on the property. "It didn't help that it was a rainy time of year and we got hit by [Hurricane Sandy] in the middle of the process," he says.



**Above:** Classic farmhouse style is expressed in the deep, covered front porch where the family can enjoy sunsets and views.

**Top:** Living spaces accommodate a family of six, with a large kitchen island and a pantry with a sliding barn door.

PHOTOS: ANDY WARREN



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# challenging sites

Farinelli's crew dug a massive, U-shaped infiltration trench behind the retaining wall located on the highest point of the slope. "We also used swales to divert water from the foundation," he says.

Precast insulated walls by Superior Walls surround the foundation. "[The precast walls are] larger than the foundation itself, usually by 2 to 3 feet," Farinelli says. "We placed crushed stone and piping in the trench, which is sometimes called the overdig. As a last line of defense, [the fill] will also direct water away from the home's lower level or basement."

The builder saved as many trees as possible to give the clients privacy, and used stone retaining walls to craft a pool area in the back of the house. The garage is tucked around the side to mask it from view. To keep the driveway at a maximum 10 percent grade, it was designed with several switchbacks, like driving up a mountain road.

Farinelli, his project manager, and three on-staff interior designers collaborated on the design, turning the house on the site in order to maximize the number of windows with a view. Instead of making the front door parallel to the road, they made it perpendicular, exposing the right side of the house.

The farmhouse style perfectly suited the young family's needs.



PHOTOS: ANDY WARREN

Farinelli Construction turned the home on the site to maximize views of the city of Harrisburg. The driveway has switchbacks to keep the grade at a maximum of 10 percent.

"They weren't looking for anything over the top," Farinelli says. "Everything they asked us to do was very practical—a timeless kind of look—so the farmhouse simplicity really appealed to them."

Farinelli's cabinet shop crafted built-ins, nooks, and closets for every room that are customized to the clients' daily activities. The flooring is wide-plank distressed walnut. Shaker style dominates rather than raised panels in the cabinetry, trim, casings, baseboards and crown molding. The home features natural

products such as wood and stone and even a reclaimed brick floor in the laundry room/pet-care area.

In addition to a children's recreation room on the second floor, there is a first-floor playroom that can be converted into a guest suite when the children no longer need it. The floor plan also includes a "command center," a 300-square-foot room for various activities including bill-paying, arts and crafts, and homework. The command center is a few steps away from the kitchen and playroom.

The adults have a luxurious retreat in their master bathroom, equipped with an oversize shower and freestanding tub.





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The two-story living room has a peninsula fireplace with a stacked-stone surround and walls of windows framing breathtaking views.

PHOTO: STEVE SMITH

The design was the result of a close collaboration between Estes and the clients. “[The client] has an extensive background in kitchen and bath cabinet design, so in large part she drew the cabinet layout and specified all the parts and pieces,” Estes says. “Then we took that to our supplier and got their feedback and pricing information.”

Many natural wood components were used to create a rustic, Northwest feel on the inside of the home, including exposed glulam beams, tongue-and-groove ceiling treatments, wood door and

## Views that go on forever

A home in Sequim, Wash., with breathtaking views of the Strait of Juan de Fuca, Mount Baker, territorial views of the Dungeness Valley, and (on a clear day) Whistler, B.C., took 16 months to build due to extensive site work.

“The site had extremely limited access with very steep slopes,” says Rick Gross of Estes Builders, in Sequim. “However, it lent itself well to providing unparalleled, unobstructed views in a beautiful, serene setting.”

The clients, a semi-retired couple, were looking for a durable, highly energy-efficient home with a modern design. Estes designed a 4,755-square-foot home to fit on the buildable portion of the site.

window trim, and open glulam stairs. There are also many modern features such as flush-panel laminate cabinets, open-cable railing systems, solid-surface tub decks, and an elevator.

A single-pitch, shed-type, standing-seam metal roof and a deck supported by powder-coated steel knee braces give the home a modern look. Meanwhile, cultured-stone accents and tongue-and-groove cedar soffits tie the house back to its Pacific Northwest location. “The color palette makes it look right at home on the site,” Gross says.

The three-level home includes a first-floor home office for him and a third-floor office for her. There is also a home theater; a home gym; and a woodworking shop. The main entrance is on the third floor as well as the living room, dining room, guest suite, and a kitchen with a coffee bar and walk-in pantry. **CB**

## EXTREME EXCAVATION

This home in Sequim, Wash., was built on a site with slopes that are as steep as 45 degrees in some places. “Substantial terracing was required,” says Rick Gross, of Estes Builders. “We then used engineered rock walls and poured-in-place concrete retaining walls to create flat areas for ingress, egress, and parking.”

Limited access made staging and installation of materials difficult, and special attention had to be given to approaches to the home for both vehicles and people. The slope also created additional challenges for trades working high above the ground.

Gross estimates that it took three to four months just to

clear trees from the site and complete the terracing and some of the retaining walls. “The dirt work was a little tricky because unless you have X-ray vision, you never know what you’re going to bump into,” he says.



PHOTO: ESTES BUILDERS

The Estes Builders crew installs footings for the foundation of a home on an extremely steep site in Sequim, Wash.



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## new products home technology



2.

### 1. Humidity Sensing Control

Broan-NuTone's Premium Humidity Sensing Control features Sensaire Automatic Sense-on-Rise technology, which can detect a rapid rise in humidity and trigger the fan to turn on before condensation forms. The unit's Continuous Ventilation Mode can be used to program the fan for preset minutes each hour to meet ASHRAE 62.2 whole-house ventilation requirements. The stand-alone wall unit is compatible with existing ventilation fans, and its design complements decorator switches while concealing user settings behind a removable door. **For more information, circle No. 850**

### 2. Insynctive Sensors

Insynctive smart-home products from Pella Windows and Doors include window and door sensors, garage door sensors, entry door deadbolt sensors, status indicators, and motorized blinds and shades. Insynctive window, door, and garage door sensors relay



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information via the Insynctive Bridge, which wirelessly connects to the Insynctive Status Indicator so that users can know at a glance whether windows or doors are open or closed. The Insynctive Entry Door Deadbolt Sensor can be installed with a new Pella door and will indicate whether the door is closed and locked. **Circle No. 851**

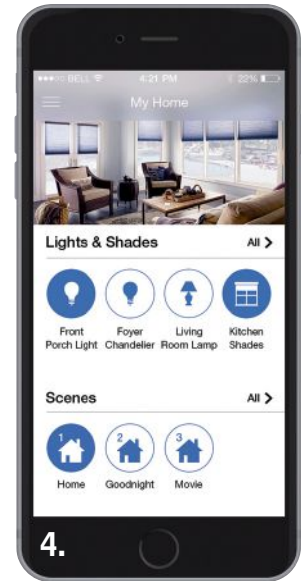
### 3. StriimLight WiFi

Music from a smartphone, tablet, or computer can be streamed via an LED StriimLight WiFi light bulb from AwoX that contains an integrated WiFi speaker. Users can place the bulb into any standard electric lamp and use the play feature to stream music. The range extender function repeats a Wi-Fi signal around the house for better range. Supported audio formats include MP3, AAC, WAV, PCM, and FLAC. A remote control allows the management of light and sound, and the product will work even when the user's smartphone is off. **Circle No. 852**

### 4. Caséta Wireless

The Caséta Wireless smart home system from Lutron allows homeowners to control lights, shades, and thermostats from either a remote control or using the Lutron app, which is compatible with any iOS or Android smartphone or tablet. Light dimmers are connected to the app via the Lutron Smart Bridge. With the Smart Bridge, the Caséta Wireless in-wall dimmers control overhead lights and work with dimmable LEDs, dimmable CFLs, halogens, and incandescents. The Caséta Wireless lamp dimmers provide control of table and floor lamps and are designed to control two lamps simultaneously with dual plug-in receptacles.

**Circle No. 853**



4.



## new products home technology



5.

### 5. GoRave

Levven's GoRave is a wireless multi-zone audio system that allows the use of apps such as YouTube and Netflix to play movies, TV, audio, video, games, and music. Users can connect an audio sender into their desired device and press play. One GoRave AR5 Audio Receiver can power three zones. GoRave does not require Wi-Fi, a password, Bluetooth pairing, or Internet. **Circle No. 854**

### 6. Bosch Sensortec

The BME680 from Bosch is an environmental sensor developed for measuring barometric pressure, humidity, temperature, and indoor air quality. Product capabilities on portable and mobile devices include: air-quality measurement, personalized weather stations, indoor navigation, fitness monitoring, home automation, and other applications for the Internet of Things (IoT). The gas sensor within BME680 can detect a broad range of gases in order to measure



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indoor air quality, including volatile organic compounds (VOCs, such as formaldehyde) from paints, lacquers, paint strippers, cleaning supplies, furnishings, office equipment, glues, adhesives, and alcohol. **Circle No. 855**

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